

TiAssisto Project

TiAssisto is a research and development project to design, develop and validate an innovative and intelligent service platform, to improve early diagnosis and quality of life in patients diagnosed with Covid-19 with or without multiple pathologies, reduce the access to the hospital. *TiAssisto* hinges on telemedicine solutions to enable treatment with high quality standards, based on ICT and artificial intelligence technologies. The project partners have developed, tested and validated telemedicine systems in other healthcare contexts, ensuring the feasibility of the proposed solutions. In phase 1 of the epidemic, paucisymptomatic Covid-19 patients at home were unable to have a follow-up and this led to their arrival at the hospital already in a phase of severe respiratory failure. Therefore, the *TiAssisto* project will provide: education and empowerment of patients and caregivers; integrated services for healthcare professionals, including telemonitoring, signal and image processing, notification systems; clinical decision support based on artificial intelligence algorithms, knowledge extraction and inference on clinical data; analysis algorithms to evaluate cardiac and lung echo images acquired directly at the patient's home. Patients will be randomized into a Tele-Health and usual therapy group (TH + UC) and into a usual therapy only group (UC). TH + UC patients will be followed up at home using the telemedicine platform with the possibility of television and will carry out a daily monitoring of vital parameters (blood pressure, oxygen saturation, body weight) through medical devices used by the same patient or by a relative. Automatic notifications will provide appropriate advice to patients and alert physicians. A virtual panel, accessible via the Web from the doctor's office, will provide the situation in real time in order of severity thanks to automatic learning methods. All enrolled patients will be followed up with a follow up (1 month, 3 months, 6 months). *TiAssisto* platform will allow an integration between the data already held by general practitioners and those acquired through the telemedicine platform. *TiAssisto* is in line with the activities introduced by the Tuscany Region (DGRT n 464 of 3 April 2020) being able to integrate with the regional platform (Health Advisor) with the addition of the television and teleconsultation activity also associating an Intelligent Decision Support System Clinical and application of artificial intelligence algorithms for the automatic interpretation of ultrasound images. This project will provide a research contribution and a potential self-financing service for the health system.

References: Lorenza Pratali MD, PhD

Keywords: Telemedicine, multipathology, multiparametric monitoring, fragility, Artificial Intelligence, Decision Support System, out of hospital ultrasound, medical imaging, biomedical computing

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Other: the project was granted by Bando Ricerca COVID-19 Toscana
